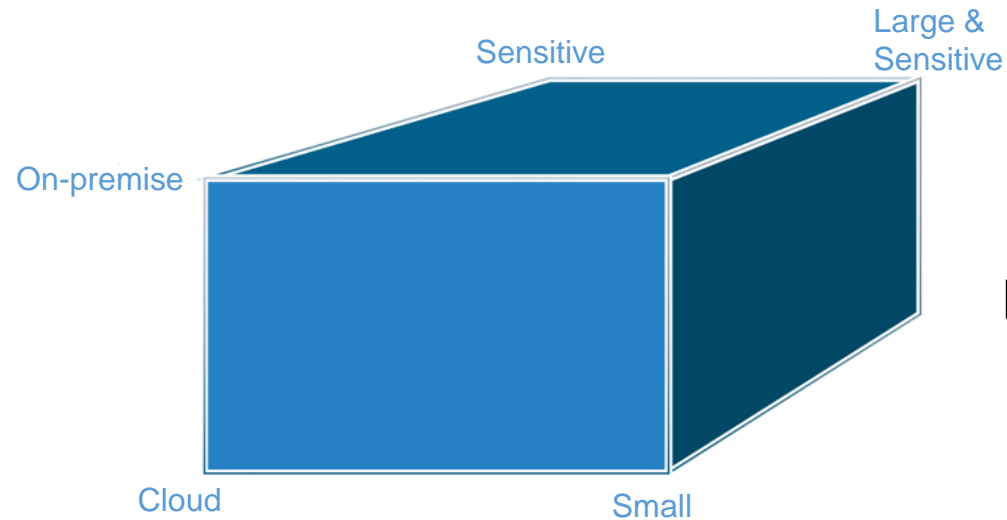# Sunet Drive

Status and plan for Swedens storage solution

- Research data – a model

- Data Integration

- Federated Data Storage and Governance

- High Level Architecture

- IdP Delegation

- Infrastructure as Code

- Monitoring and Operations

- Replication of data/backup
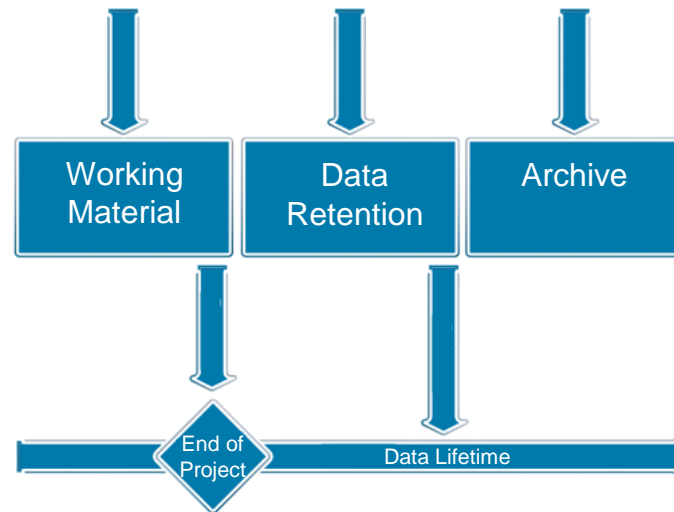
- Metadata integration

Research Data – A model

Classification

Sensitive

Large & Sensitive

On-premise

Cloud

Small

| How do you access data? | Where is my data? |

Livecycle

| Working Material | Data Retention | Archive |

End of Project

Data Lifetime

Access

| "Classical" Folders | "Modern" Apps |

Research Data – A model

Classification

Large & Sensitive

Sensitive

On-premise

How do you access data?

Where is my data?

Livecycle

This is where the money ends!*

Working Material

Data Retention

Archive

Access

"Classical" Folders

"Modern" Apps

End of Project

Data Lifetime

*for many projects

SUNET
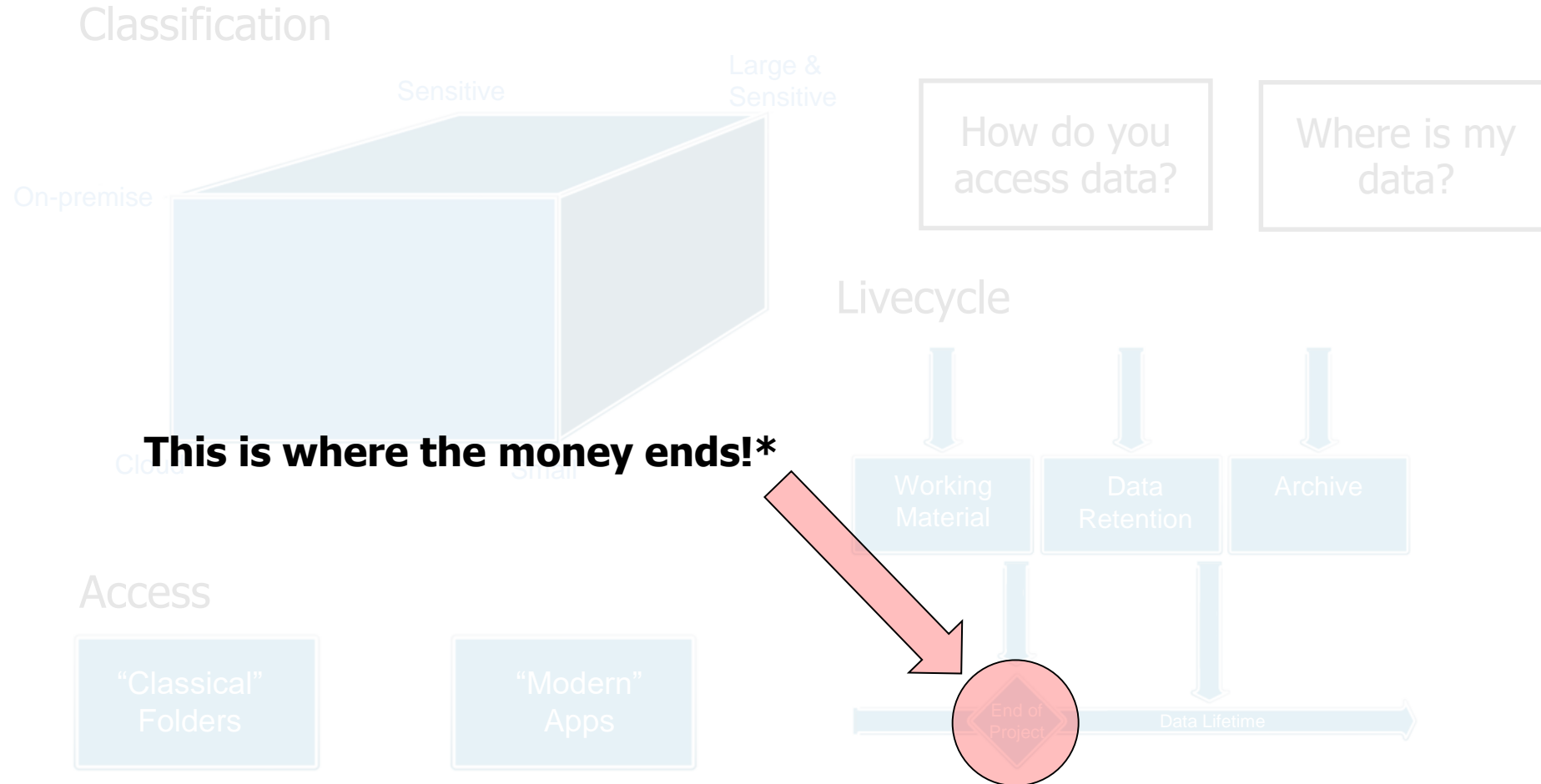
Example - Integration

Primary data sources

Access

UV-Vis →

IVIUM →

… →

Storage (S3)

PIA →

IPCE →

Federated Data Storage and Governance

- S3-buckets as main storage unit

- Nextcloud as access layer

- Individual nodes as part of global scale

- Co-management with Sunet

- Follow your data even from a new organisation

- **Separation of access vs ownership**
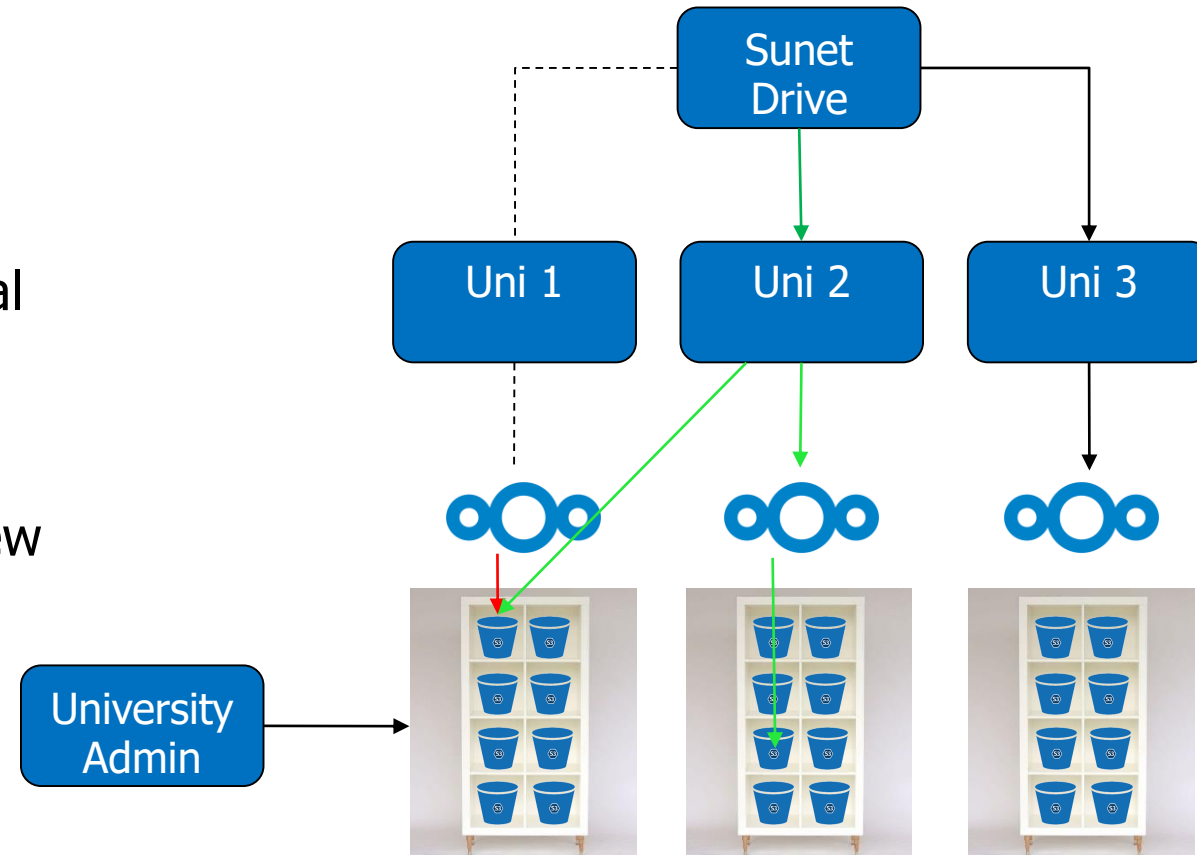
drive.sunet.se – High level architecture

Paying universities get an automatically provisioned HA node with no SPOF consisting of:

- Load-balanced Sunet Drive Frontend Servers
- MariaDB Galera cluster as database
- Redis Server/Sentinel Cluster for improved performance
- S3 storage integration
- Access to test environment
- Optional storage-mirroring
- Customer support

Non-Paying universities get:
- Access via a shared node
- Provisioning of user accounts
- ↓The option to upgrade to this↓ ☺
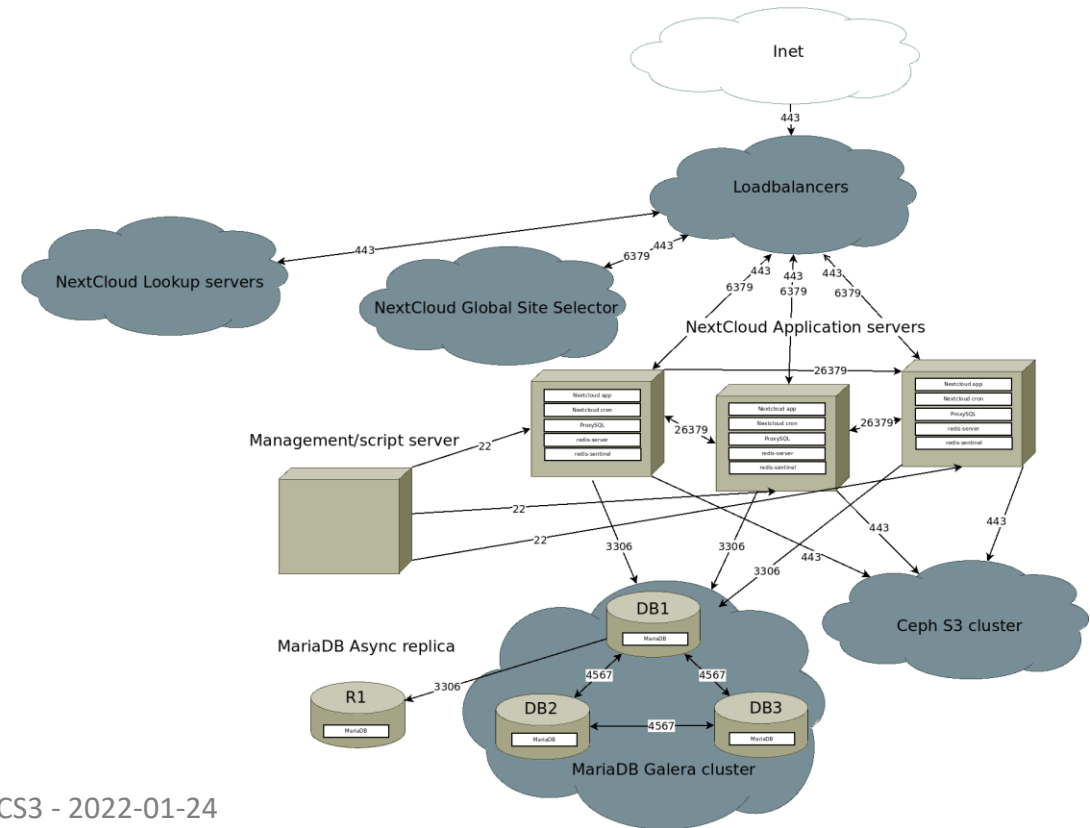
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drive.sunet.se – IdP delegation

SWAMID/eduGAIN/Seamlessaccess

Choose Your Institution
Recent institutions

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Uppsala University
user.uu.se

Stockholm University
su.se

Add another institution   Edit

→ sunet.drive.sunet.se

→ uu.drive.sunet.se

→ su.drive.sunet.se

EduID

eduID is easier and safer login.

EMAIL:
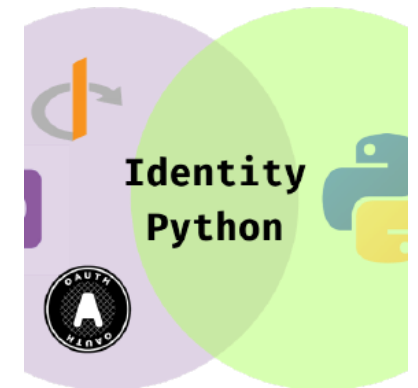richard@...

PASSWORD:
....

Forgot your password?

SIGN IN

→ extern.drive.sunet.se

Infrastructure as Code*

Not Invented Here

Invented Here™

* https://github.com/SUNET/multiverse/

Shout Out to Thruk*

Nagios/Naemon/Icinga/Shinken would not be the same without you!

* http://www.thruk.org/

Replication of data/backup

Manual replication/backup strategy
- Based on rclone
- Manually mirror between data centers
- Backup-buckets with retention time
- Requires a lot of tuning

- Waiting for something better
  (deuxfleurs/garage?)

[**Website and documentation** | Binary releases | Git repository | Matrix channel]

Garage is a lightweight S3-compatible distributed object store, with the following goals:

- As self-contained as possible
- Easy to set up
- Highly resilient to network failures, network latency, disk failures, sysadmin failures
- Relatively simple
- Made for multi-datacenter deployments

Non-goals include:

- Extremely high performance
- Complete implementation of the S3 API
- Erasure coding (our replication model is simply to copy the data as is on several nodes, in different datacenters if possible)

Our main use case is to provide a distributed storage layer for small-scale self hosted services such as Deuxfleurs.

Not ready for prime time

SND/Doris Integration - Future

Tack! Questions?

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